

Listing of Claims

1. (Currently Amended) A method comprising:
determining an operational link error rate of a link; and
estimating a real-time physical link error rate of said link using said operational
link error rate and a hysteresis factor, wherein
said hysteresis factor is a ratio of a physical link alarm set
threshold to a physical link alarm clear threshold.
2. (Original) The method of claim 1,
wherein said link comprises a link between a first network element and a second
network element of a communications network;
wherein said method further comprises,
detecting an operational link error on said link; and
wherein said determining comprises,
determining said operational link error rate of said link in response to said
detecting.
3. (Original) The method of claim 2, further comprising:
transferring data on said link between said first network element and said second
network element, wherein,
said detecting, said determining, and said estimating are performed at least
partially concurrently with said transferring.
4. (Original) The method of claim 3, wherein said detecting comprises,
performing a cyclic redundancy check on at least a portion of said data.
5. (Original) The method of claim 4, wherein,
said transferring data on said link between said first network element and said
second network element comprises,
transferring a data frame and a frame check sequence, and
said performing a cyclic redundancy check comprises,

performing an operation on said data frame to generate a result, and
comparing said result to said frame check sequence.

6. (Original) The method of claim 3, wherein said estimating comprises:
estimating a real-time bit error rate of said link.

7. (Original) The method of claim 3, wherein,
said transferring data on said link between said first network element and said
second network element comprises,
transferring a plurality of data sets;
said detecting said operational link error on said link between said first network
element and said second network element comprises,
detecting an operational link error within at least one of said plurality of
data sets; and
said estimating said real-time physical link error rate of said link comprises,
indicating a physical link error for said at least one of said plurality of data
sets.

8. (Original) The method of claim 3, further comprising:
identifying a physical link error alarm set threshold;
comparing said physical link error alarm set threshold and said real-time physical
link error rate; and
generating an alarm signal in response to said comparing.

9. (Currently Amended) The method of claim 8, wherein said identifying
comprises:
receiving data specifying a user-specified ~~physical~~ link error alarm set threshold
and a user-specified hysteresis factor, wherein
said user-specified hysteresis factor is a ratio of a physical link alarm ~~clear~~
set threshold to a physical link alarm set clear threshold;
determining a transmission bit rate of said link; and

generating a physical link error alarm set threshold using said user-specified physical link error alarm set threshold, said hysteresis factor, and said transmission bit rate of said link.

10. (Original) The method of claim 3, further comprising:
identifying a physical link error alarm clear threshold;
comparing said physical link error alarm clear threshold and said real-time physical link error rate; and
clearing an alarm signal in response to said comparing.

11. (Canceled)

12. (Currently Amended) A machine-readable medium having a plurality of instructions executable by a machine embodied therein, wherein said plurality of instructions when executed cause said machine to perform a method comprising:
determining an operational link error rate of a link; and
estimating a real-time physical link error rate of said link using said operational link error rate and a hysteresis factor, wherein
said hysteresis factor is a ratio of a physical link alarm set threshold to a physical link alarm clear threshold.

13. (Original) The machine-readable medium of claim 12,
wherein said link comprises a link between a first network element and a second network element of a communications network;
wherein said method further comprises,
detecting an operational link error on said link; and
wherein said determining comprises,
determining said operational link error rate of said link in response to said detecting.

14. (Original) The machine-readable medium of claim 13, said method further comprising:

transferring data on said link between said first network element and said second network element, wherein,
said detecting, said determining, and said estimating are performed at least partially concurrently with said transferring.

15. (Original) The machine-readable medium of claim 14, wherein said detecting comprises:

performing a cyclic redundancy check on at least a portion of said data.

16. (Original) The machine-readable medium of claim 15, wherein,
said transferring data on said link between said first network element and said second network element comprises,
transferring a data frame and a frame check sequence, and
said performing a cyclic redundancy check comprises,
performing an operation on said data frame to generate a result, and
comparing said result to said frame check sequence.

17. (Original) The machine-readable medium of claim 14, wherein said estimating comprises:

estimating a real-time bit error rate of said link.

18. (Original) The machine-readable medium of claim 14, wherein,
said transferring data on said link between said first network element and said second network element comprises,
transferring a plurality of data sets;
said detecting said operational link error on said link between said first network element and said second network element comprises,
detecting an operational link error within at least one of said plurality of data sets; and
said estimating said real-time physical link error rate of said link comprises,
indicating a physical link error for said at least one of said plurality of data sets.

19. (Original) The machine-readable medium of claim 14, said method further comprising:
 identifying a physical link error alarm set threshold;
 comparing said physical link error alarm set threshold and said real-time physical link error rate; and
 generating an alarm signal in response to said comparing.

20. (Currently Amended) The machine-readable medium of claim 19, wherein said identifying comprises:
 receiving data specifying a user-specified ~~physical~~ link error alarm set threshold and a user-specified hysteresis factor, wherein
 said user-specified hysteresis factor is a ratio of a physical link alarm ~~clear~~ set threshold to a physical link alarm ~~set~~ clear threshold;
 determining a transmission bit rate of said link; and
 generating a physical link error alarm set threshold using said user-specified physical link error alarm set threshold, said hysteresis factor, and said transmission bit rate of said link

21. (Original) The machine-readable medium of claim 14, said method further comprising:
 identifying a physical link error alarm clear threshold;
 comparing said physical link error alarm clear threshold and said real-time physical link error rate; and
 clearing an alarm signal in response to said comparing.

22. (Canceled)

23. (Currently Amended) An apparatus comprising:
 a monitoring subsystem to determine an operational link error rate of a link and to estimate a real-time physical link error rate of said link using said operational link error rate and a hysteresis factor, wherein

said hysteresis factor is a ratio of a physical link alarm set threshold to a physical link alarm clear threshold; and
an alarm subsystem to generate an alarm signal in response to a comparison of
said real-time physical link error rate and a physical link error alarm set
threshold.

24. (Original) The apparatus of claim 23, further comprising:
a configuration subsystem to receive data specifying said physical link error alarm
set threshold.

25. (Original) The apparatus of claim 23, wherein said monitoring subsystem
comprises:
a monitoring subsystem to detect an operational link error on said link.

26. (Original) The apparatus of claim 25, wherein
said link comprises a link between a first network element and a second network
element of a communications network; and
said monitoring subsystem comprises
a monitoring subsystem to determine said operational link error rate of
said link and to estimate said real-time physical link error rate of
said link using said operational link error rate at least partially
concurrently with a transfer of data between said first network
element and said second network element on said link.

27. (Original) The apparatus of claim 26, wherein said monitoring subsystem
to detect said operational link error on said link comprises:
a monitoring subsystem to perform a cyclic redundancy check on at least a
portion of said data.

28. (Original) The apparatus of claim 26, wherein said cyclic redundancy
check comprises a frame check sequence check.

29. (Original) The apparatus of claim 23, wherein said alarm subsystem comprises:
an alarm subsystem to clear said alarm signal in response to a comparison of said real-time physical link error rate and a physical link error alarm clear threshold.
30. (Currently Amended) An apparatus comprising:
means for determining an operational link error rate of a link; and
means for estimating a real-time physical link error rate of said link using said operational link error rate and a hysteresis factor, wherein
said hysteresis factor is a ratio of a physical link alarm set threshold to a physical link alarm clear threshold.
31. (Original) The apparatus of claim 30,
wherein said link comprises a link between a first network element and a second network element of a communications network; and
said apparatus further comprises,
means for detecting an operational link error on said link coupled with said means for determining said operational link error rate of said link.
32. (New) A method for identifying a physical link error alarm set threshold comprising:
receiving data specifying a user-specified link error alarm set threshold and a user-specified hysteresis factor, wherein
said user-specified hysteresis factor is a ratio of a physical link alarm set threshold to a physical link alarm clear threshold;
determining a transmission bit rate of said link; and
generating a physical link error alarm set threshold using said user-specified physical link error alarm set threshold, said hysteresis factor, and said transmission bit rate of said link.